

What is claimed is:

1 1. A method comprising:
2 obtaining first data to be delivered to multiple user devices via a common
3 channel;
4 obtaining second data to be delivered to a specific user device via a dedicated
5 channel;
6 acquiring channel information for a common channel between a transmitter and
7 said specific user device; and
8 generating a transmit signal for said specific user device using said first data,
9 said second data, and said channel information, said transmit signal to be transmitted
10 from said transmitter to said specific user device.

1 2. The method of claim 1, further comprising:
2 acquiring channel information for a dedicated channel between said transmitter
3 and said specific user device before generating said transmit signal, wherein generating
4 said transmit signal includes using said channel information for said dedicated channel.

1 3. The method of claim 1, wherein:
2 said transmit signal is configured so that common channel interference will be at
3 least partially cancelled within said specific user device after reception therein.

1 4. The method of claim 3, wherein:
2 said method is for use within a code division multiple access (CDMA) based
3 system; and
4 said common channel interference will be at least partially cancelled at the chip
5 level.

1 5. The method of claim 3, wherein:
2 said method is for use within a CDMA based system; and
3 said common channel interference will be at least partially cancelled at the
4 symbol level.

1 6. The method of claim 1, wherein:
2 acquiring channel information includes receiving channel information from said
3 specific user device.

1 7. The method of claim 1, wherein:
2 said transmitter is part of a base station in a cellular CDMA system; and
3 said first data includes data to be broadcast as part of a pilot signal.

1 8. The method of claim 1, wherein:
2 said transmitter is part of a base station in a cellular CDMA system; and
3 said first data includes data to be broadcast as part of a paging signal.

1 9. The method of claim 1, wherein:
2 generating a transmit signal includes using dirty paper cancellation techniques.

1 10. The method of claim 1, wherein:
2 generating a transmit signal includes determining a common channel
3 interference component that would be output by a receiver of said specific user device
4 as a result of transmitting said first data from said transmitter into said common channel
5 without using interference mitigation.

1 11. The method of claim 10, wherein:
2 determining a common channel interference component includes determining an
3 effect of the common channel, as given by said channel information, on said first data.

1 12. The method of claim 10, wherein:
2 generating a transmit signal includes determining a difference between said
3 common channel interference component and said second data.

1 13. The method of claim 1, wherein:
2 generating a transmit signal includes performing a modulo lattice operation.

1 14. The method of claim 1, further comprising:
2 transmitting said transmit signal from said transmitter.

1 15. A communication apparatus comprising:
2 a common channel interference unit to determine a common channel
3 interference component associated with a remote user device; and
4 a transmit signal generator to generate a transmit signal to be transmitted to said
5 remote user device via a dedicated channel, said transmit signal generator using said
6 common channel interference component and dedicated data to generate said transmit
7 signal.

1 16. The communication apparatus of claim 15, wherein:
2 said common channel interference unit determines said common channel
3 interference component using known common channel transmit data and corresponding
4 channel information.

1 17. The communication apparatus of claim 15, wherein:
2 said transmit signal generator generates said transmit signal using dirty paper
3 cancellation techniques.

1 18. The communication apparatus of claim 15, wherein:
2 said transmit signal generator includes a modulo lattice unit.

1 19. A system comprising:
2 at least one dipole antenna;
3 a common channel interference unit to determine a common channel
4 interference component associated with a remote user device; and
5 a transmit signal generator to generate a transmit signal to be transmitted to said
6 remote user device via a dedicated channel, said transmit signal generator using said
7 common channel interference component and dedicated data to generate said transmit
8 signal, wherein said transmit signal is transmitted using said at least one dipole antenna.

1 20. The system of claim 19, wherein:
2 said common channel interference unit determines said common channel
3 interference component using known common channel transmit data and corresponding
4 channel information.

1 21. The system of claim 19, wherein:
2 said transmit signal generator includes a modulo lattice unit.

1 22. An article comprising a storage medium having instructions stored thereon that,
2 when executed by a computing platform, result in:
3 obtaining first data to be delivered to multiple user devices via a common
4 channel;
5 obtaining second data to be delivered to a specific user device via a dedicated
6 channel;
7 acquiring channel information for a common channel between a transmitter and
8 said specific user device; and
9 generating a transmit signal for said specific user device using said first data,
10 said second data, and said channel information, said transmit signal to be transmitted
11 from said transmitter to said specific user device.

1 23. The article of claim 22, wherein said instructions, when executed by the
2 computing platform, further result in:

3 acquiring channel information for a dedicated channel between said transmitter
4 and said specific user device before generating said transmit signal, wherein generating
5 said transmit signal includes using said channel information for said dedicated channel.

1 24. The article of claim 22, wherein:

2 said transmit signal is configured so that common channel interference will be at
3 least partially cancelled within said specific user device after reception therein.

1 25. The article of claim 22, wherein:

2 generating a transmit signal includes using dirty paper cancellation techniques.

1 26. The article of claim 22, wherein:

2 generating a transmit signal includes performing a modulo lattice operation.

1 27. A method comprising:

2 obtaining first data to be delivered to user devices associated with a first class
3 via corresponding dedicated channels;

4 obtaining second data to be delivered to user devices associated with a second
5 class via corresponding dedicated channels;

6 acquiring channel information from user devices associated with said second
7 class; and

8 generating transmit signals to be transmitted to user devices associated with said
9 second class using said first data, said second data, and said channel information.

1 28. The method of claim 27, wherein:

2 said first class includes user devices that do not use dirty paper cancellation
3 techniques.

1 29. The method of claim 27, wherein:
2 said second class includes user devices that use dirty paper cancellation
3 techniques.

1 30. The method of claim 27, wherein:
2 generating transmit signals includes using dirty paper cancellation techniques.

1 31. The method of claim 27, wherein:
2 generating transmit signals includes generating signals that are configured to
3 cancel interference caused by signals transmitted to user devices associated with said
4 first class.

1 32. The method of claim 31, wherein:
2 generating transmit signals includes generating signals that are configured to
3 cancel interference caused by signals transmitted to user devices associated with said
4 second class.

1 33. The method of claim 27, wherein:
2 generating transmit signals includes performing a decomposition of a channel
3 matrix into a unitary matrix and a triangular matrix.

1 34. The method of claim 27, wherein:
2 generating transmit signals includes performing a modulo lattice operation.

1 35. A communication apparatus comprising:
2 an interference unit to collect data to be delivered to user devices within a first
3 class via corresponding dedicated channels and to use the collected data to generate a
4 composite interference signal; and
5 a transmit signal generator to generate transmit signals to be transmitted to user
6 devices within a second class via corresponding dedicated channels, said transmit signal

7 generator using said composite interference signal, dedicated data to be delivered to
8 said user devices within said second class, and channel information associated with said
9 user devices within said second class.

1 36. The communication apparatus of claim 35, wherein:
2 said first class includes user devices that do not use dirty paper cancellation
3 techniques.

1 37. The communication apparatus of claim 35, wherein:
2 said second class includes user devices that use dirty paper cancellation
3 techniques.

1 38. The communication apparatus of claim 35, wherein:
2 said transmit signal generator uses dirty paper cancellation techniques to
3 generate said transmit signals.

1 39. The communication apparatus of claim 35, wherein:
2 said transmit signal generator includes a modulo lattice unit.

1 40. The communication apparatus of claim 35, wherein:
2 said transmit signal generator includes matrix decomposition functionality for
3 decomposing a channel matrix into a unitary matrix and a triangular matrix.

1 41. A method comprising:
1 generating a transmit signal for transmission to a remote user device via a
2 dedicated channel that is pre-configured to cancel common channel interference within
3 said remote user device upon reception; and
4 transmitting said transmit signal.

1 42. The method of claim 41, wherein:
2 generating a transmit signal includes performing a modulo lattice operation.

1 43. The method of claim 41, wherein:
2 generating a transmit signal includes using dirty paper cancellation techniques..